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DRAFT
AFTER-ACTION LETTER REPORT
PERMAFIX OF MICHIGAN, INC. SITE
BROWNSTOWN, MICHIGAN
TDD: S05-0311-001

February 6, 2004

Prepared for:

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Emergency Response Branch
9311 Groh Road
Grosse Ile, Michigan 48138

Prepared by: Michael J Browning
Mike Browning, Project Lead START
Date: 2-6-04

Reviewed and Approved by: Daniel M. Capone
Daniel M. Capone, START Manager
Date: 2-6-04

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February 6, 2004

U.S. EPA Contract No.: 68-W-00-119

Mr. Brian Kelly, On-Scene Coordinator
U.S. Environmental Protection Agency
Emergency Response Branch
9311 Groh Road
Grosse Ile, MI 48138

TDD No.: S05-0311-001
DCN: 429-2A-ADUS

RE: PermaFix of Michigan, Inc. Emergency Response
Draft After-Action Letter Report
Brownstown, Wayne County, Michigan

Dear Mr. Kelly:

On November 12, 2003, the United States Environmental Protection Agency (U.S. EPA) tasked the Weston Solutions, Inc. (WESTON®), Superfund Technical Assessment and Response Team (START) contractor to respond to an emergency response at the PermaFix of Michigan, Inc. (PermaFix) waste treatment facility, in Brownstown, Wayne County, Michigan (Attachment A, Figure A-1).

At approximately 0545 hours on November 12, 2003, an explosion destroyed the western side of the PermaFix mixing building, also known as the Cure Building (Attachment A, Figure A-2). A crane operator inside the building at the time of the explosion was subsequently treated for hearing loss. No other injuries occurred as a result of the explosion. The cause of the explosion is believed to have been a build up of hydrogen gas created by the improper treatment of aluminum paste with mineral spirts and water. The Brownstown Fire Department (BFD) immediately responded to the scene, found the fire to be contained, and closed the adjacent Allen Road (thus affecting two area businesses).

The Region V U.S. EPA Emergency Response Branch was subsequently requested to respond to the PermaFix site to provide air monitoring support. The U.S. EPA subsequently tasked START to respond to the site.

At approximately 0905 hours, U.S. EPA On-Scene Coordinators (OSCs) Brian Kelly and Jon Gulch arrived at the PermaFix site. OSC Kelly and BFD Chief Jeff Drouillard convened an "all-hands" meeting at the facility to discuss the current status of the Cure Building, as well as to determine the possible strategies for evaluating potential remaining hazards associated with the containers and wastes in the Cure Building. During this briefing, the PermaFix facility operators provided information on the contents of the bins in the Cure Building.

U.S. EPA and PermaFix employee Jacob Allen initiated air monitoring in Level B personal protective equipment (PPE) in the area of the Cure Building (Attachment A, Figure A-2). Air monitoring was conducted utilizing a Multi-RAE multi-gas instrument for volatile organic compound (VOC) vapors, explosivity [as measured by percent of the lower explosive limit (LEL)], hydrogen sulfide (H2S), carbon monoxide (CO), and percent oxygen. In addition, U.S. EPA conducted air monitoring for particulates utilizing a Personal Data RAM dust monitor, for mercury vapors utilizing a Lumex, and for various other chemicals of potential concern utilizing Draeger tubes, including arsenic, cyanide, chromic acid, xylene, toluene, and acid vapors. Initial air monitoring conducted around the outside perimeter of the Cure Building revealed only low levels of cyanide.

In addition to the initial air monitoring conducted by the U.S. EPA, PermaFix employee Jim Presley collected an air sample utilizing an evacuated Summa cannister. The Summa cannister sample was sent to AAC Trinity Laboratories for an analysis of the standard reporting list of VOCs, via U.S. EPA Method TO-15.

OSC Kelly subsequently directed PermaFix to continue conducting air monitoring in the vicinity of the Cure Building every ½ hour through the night of November 12, 2003 and into the morning of November 13, 2003. BFD Chief Drouillard and OSC Kelly agreed that Allen Road could be reopened, while access to the Cure Building area would remain restricted.

On November 13, 2003, U.S. EPA conducted an additional round of air monitoring at the PermaFix facility utilizing the MultiRAE multi-gas meter and Draeger tubes. All air monitoring readings collected were negative. In addition, PermaFix received analytical results from the Summa cannister sample collected on November 12. There were no contaminants detected in the sample. OSC Kelly subsequently terminated the response efforts by the U.S. EPA.

On November 12, 2003, the following individuals mobilized to the site:

Agencies or Parties Involved	Contact	Description of Participation
U.S. EPA - Region 5 Division of Superfund Emergency Response Branch	OSCs Brian Kelly and Jon Gulch	Provided overall response activity coordination.
WESTON START	Michael Browning, Rebecca Nemirovsky, Shamille Lewis, and Eric Larson	Conducted initial air monitoring activities and other response related documentation activities (e.g., photo-documentation, documentation of activities in a field logbook, and air monitoring).
Brownstown Fire Department	Fire Chief Jeff Drouillard, other fire personnel	Provided initial response efforts after the explosion (initial fire suppression, medical attendance of facility personnel, and access restriction to the facility area) and provided follow up coordination of response efforts (road closure, site security, and decontamination line support).
State of Michigan Department of Environmental Quality	Jonathan Lamb	Provided technical support to the U.S. EPA as the Air Inspector for the PermaFix facility.
State of Michigan Department of Consumer and Industry Services	Charles Collier	Conducted investigation to determine if the PermaFix facility was in compliance with standards and regulations promulgated under Act 154: Michigan Occupational Safety and Health Act (MIOSHA)
Schreiber and Yonley Associates	Brad Phillips and Gerald Goodwin	Provided follow-up logistical and air monitoring support on behalf of PermaFix, as the environmental consulting firm for PermaFix.

Select photo documentation of the emergency response activities is provided in Attachment B, and a copy of the site logbook is provided as attachment C. Complete photo documentation is available in the site file.

This letter report completes the reporting requirements under this TDD. Please do not hesitate to call if any clarification is needed or if this office can be of further assistance.

Sincerely,

Michael T. Browning
Project Lead START

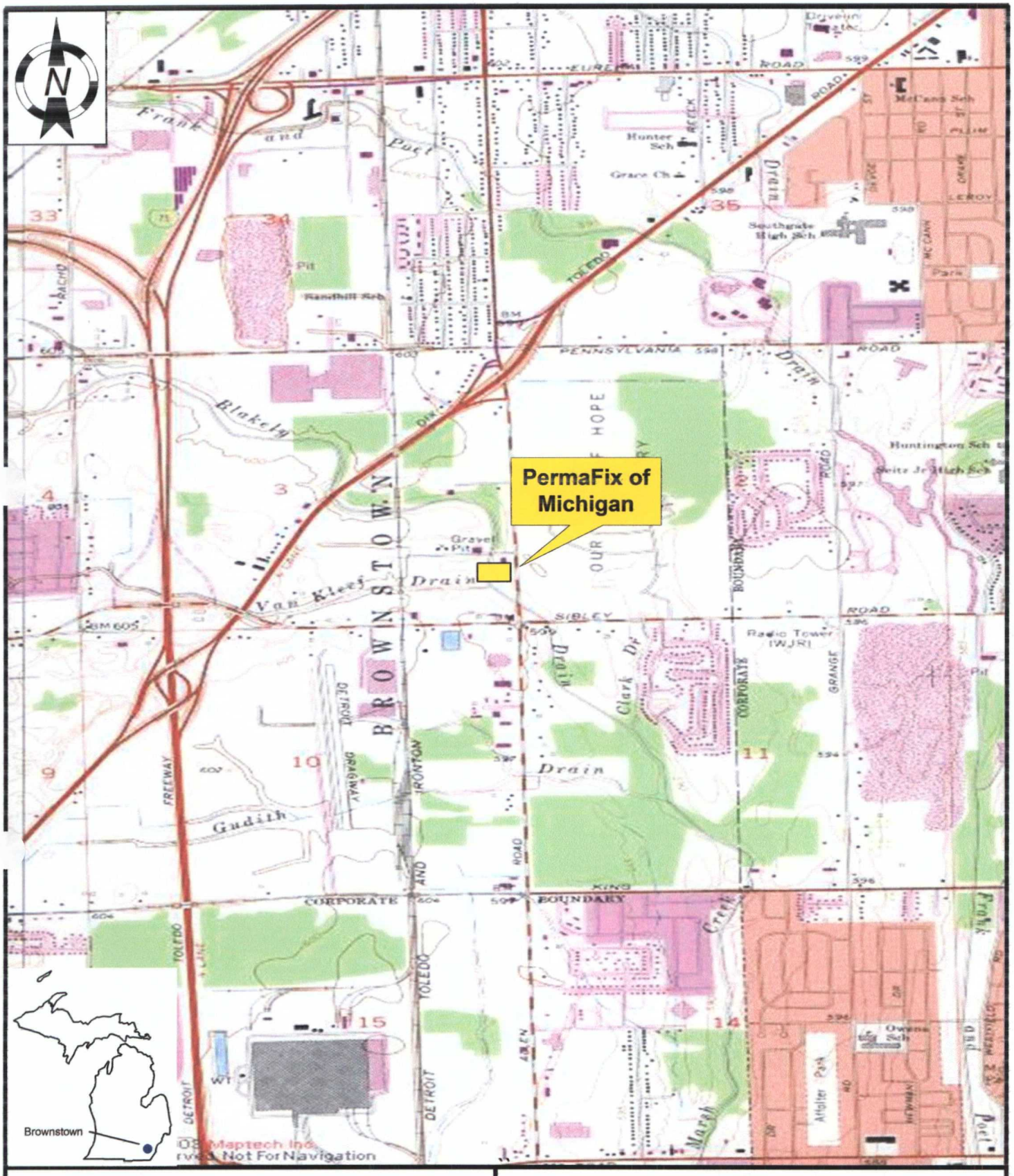
Daniel Capone
START Project Manager

Attachments: A Site Figures
Figure A-1, Site Location Map
Figure A-2, Site Features Sketch
B Select Photo Documentation
C Copy of Site Logbook

cc: Gail Nabasny, Project Officer, U.S. EPA Region 5
File

ATTACHMENT A

SITE FIGURES



SITE LOCATION MAP

PERMAFIX ENVIRONMENTAL SERVICES
18550 ALLEN ROAD
BROWNSTOWN, MICHIGAN

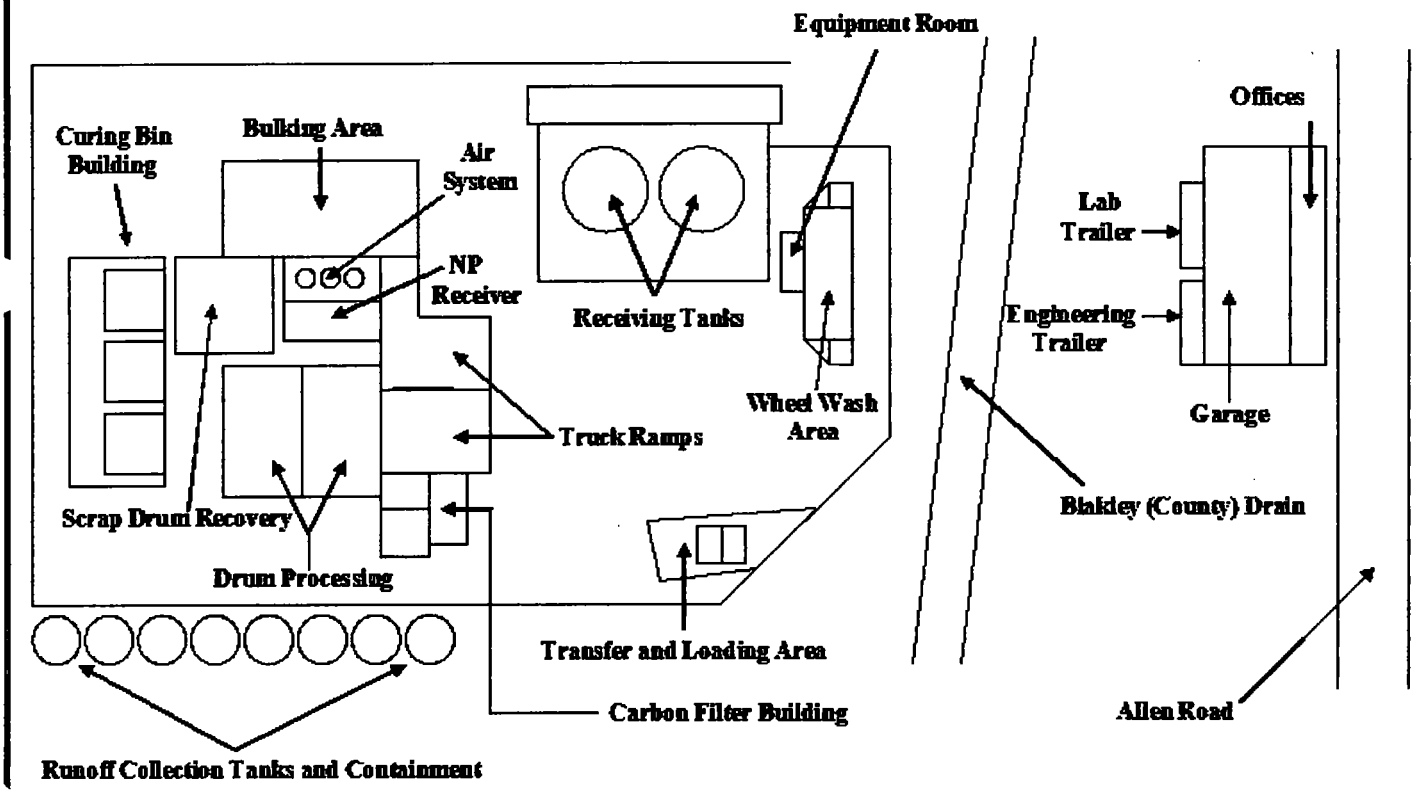
WESTON SOLUTIONS

REGION V SUPERFUND TECHNICAL ASSISTANCE AND RESPONSE TEAM

TDD #	DRAWN BY:	DATE
0311-001	M. BROWNING	DECEMBER 2003

FILE NAME: K:\START\ACTIVE PROJECTS\0429 PermaFix ER\FIG A-1.vsd

FIGURE A-1



SITE FEATURES MAP

PERMAFIX ENVIRONMENTAL SERVICES
18550 ALLEN ROAD
BROWNSTOWN, MICHIGAN

WESTON SOLUTIONS

REGION V SUPERFUND TECHNICAL ASSISTANCE AND RESPONSE TEAM

TDD #	DRAWN BY:	DATE
0311-001	M. BROWNING	DECEMBER 2003

FILE NAME: K:\START\ACTIVE PROJECTS\0429 PermaFix ERRS\G A-2.vsd

FIGURE A-2

ATTACHMENT B

SELECT PHOTO DOCUMENTATION

SITE: PermaFix E.R.

DATE: November 12, 2003

PHOTO NO: 1 **DIRECTION:** NE

SUBJECT: Emergency response vehicle operated by the Brownstown Fire Department.

PHOTOGRAPHER: M. Browning

SITE: PermaFix E.R.

DATE: November 12, 2003

PHOTO NO: 2 **DIRECTION:** W

SUBJECT: Cure Building (background) showing explosion damage.

PHOTOGRAPHER: M. Browning

SITE: PermaFix E.R. **DATE:** November 12, 2003

PHOTO NO: 3 **DIRECTION:** NW **SUBJECT:** Cure Building showing explosion damage.

PHOTOGRAPHER: M. Browning

SITE: PermaFix E.R. **DATE:** November 12, 2003

PHOTO NO: 4 **DIRECTION:** N **SUBJECT:** Cure Building showing explosion damage.

PHOTOGRAPHER: M. Browning

SITE: PermaFix E.R. **DATE:** November 12, 2003

PHOTO NO: 5 **DIRECTION:** N **SUBJECT:** Explosion debris on the west side of the Cure Building.

PHOTOGRAPHER: M. Browning

SITE: PermaFix E.R. **DATE:** November 12, 2003

PHOTO NO: 6 **DIRECTION:** N **SUBJECT:** Interior of the Cure Building.

PHOTOGRAPHER: M. Browning

SITE: PermaFix E.R. **DATE:** November 12, 2003

PHOTO NO: 7 **DIRECTION:** N **SUBJECT:** Explosion debris on the west side of the Cure Building.

PHOTOGRAPHER: M. Browning

SITE: PermaFix E.R. **DATE:** November 12, 2003

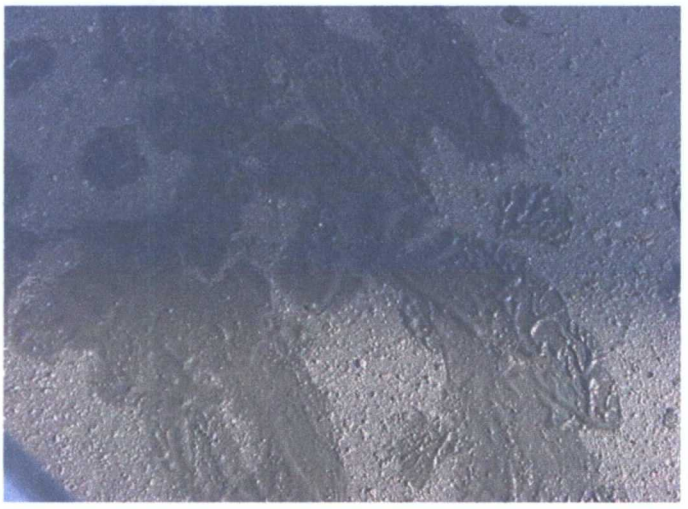
PHOTO NO: 8 **DIRECTION:** W **SUBJECT:** Explosion damage at the Bulking Area Building.

PHOTOGRAPHER: M. Browning

SITE: PermaFix E.R. **DATE:** November 12, 2003

PHOTO NO: 9 **DIRECTION:** S **SUBJECT:** Cure Building showing explosion damage.

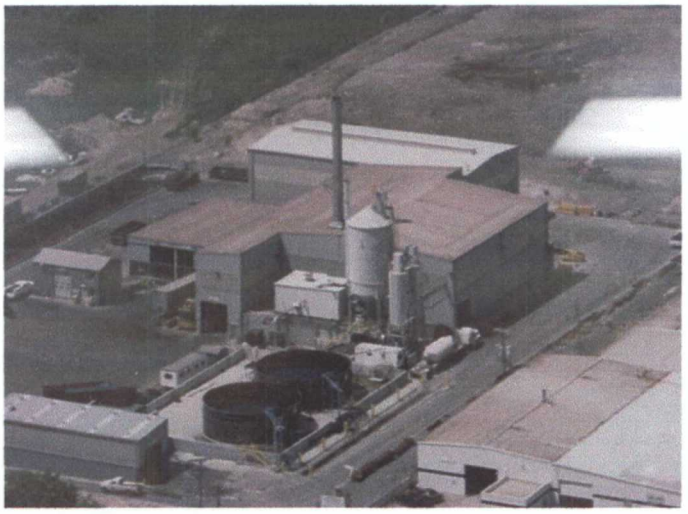
PHOTOGRAPHER: M. Browning



SITE: PermaFix E.R. **DATE:** November 12, 2003

PHOTO NO: 10 **DIRECTION:** D **SUBJECT:** Wet kiln dust on the pavement due north of the Cure Building.

PHOTOGRAPHER: M. Browning



SITE: PermaFix E.R. **DATE:** November 13, 2003

PHOTO NO: 11 **DIRECTION:** N/A **SUBJECT:** Photo of an aerial photo of the PermaFix facility.

PHOTOGRAPHER: M. Browning

SITE: PermaFix E.R. **DATE:** November 13, 2003

PHOTO NO: 12 **DIRECTION:** N/A **SUBJECT:** Photo of an aerial photo of the PermaFix facility.

PHOTOGRAPHER: M. Browning

SITE: PermaFix E.R. **DATE:** November 13, 2003

PHOTO NO: 13 **DIRECTION:** NW **SUBJECT:** Cure Building showing explosion damage.

PHOTOGRAPHER: M. Browning

SITE: PermaFix E.R. **DATE:** November 13, 2003

PHOTO NO: 14 **DIRECTION:** W **SUBJECT:** Caution tape restricting access to the Cure Building.

PHOTOGRAPHER: M. Browning

SITE: PermaFix E.R. **DATE:** November 13, 2003

PHOTO NO: 15 **DIRECTION:** SW **SUBJECT:** Cure Building showing explosion damage.

PHOTOGRAPHER: M. Browning

SITE: PermaFix E.R. **DATE:** November 13, 2003

PHOTO NO: 16 **DIRECTION:** SW **SUBJECT:** Caution tape restricting access to the Cure Building.

PHOTOGRAPHER: M. Browning

ATTACHMENT C

COPY OF SITE LOGBOOK

November 12, 2003 12634-001-003-0100

0935 START Browning arrives at 1855 Allen Road in Brownstown, MI. The facility name is Perma-Fix of Michigain. Initial E.R. call was received from Brian Kelley at 0835. — MTB

1000 Calibration of the MultiRAE begins. — MTB
Calibration reading: CO = 50, H_2S = 24, LEL = 49, O_2 = 20.9, and VOC = 100. — MTB

1035 ER Vehicle arrives at the site. — MTB

1135 Calibration of the TVA 1000 begins. — MTB
Zero Air PID = 3751 — MTB
Zero Air FID = 3955 — MTB
SPAN PID = ~~9260~~ 440755. — MTB
SPAN FID = 34160 — MTB
— MTB

11:15 PDR was zeroed — EAL
— EAL

12:45 Shamille - video & dräger tubes — EAL
— Rebecca - Lumex & multiray — EAL
— Mike - digital camera, data RAM — EAL
0.025 background
— EAL

12:50 Enter the building — EAL
— EAL
— EAL
— EAL

November 12, 2003 12634-001-003-0429-00

1:05 Rebecca reports that — EAL
no VOC's, pdr 3 — EAL
final direction continue N, — EAL
appears to be increasing & — EAL
testing. — EAL
— EAL
— EAL
— EAL

1:20 Come out of — EAL
facility. — EAL

1520 START Browning and PF rep. Jacob Allen begin the first air monitoring round. — MTB

1522 Prager Cyanide begins. — MTB

1531 Some pink color change in the cyanide tube, but not in the beige crystals.

1532 Drager Acid Test Begins. Negative on the acid tube, no color change.

1541 START Browning and Mr. Allen finish the air monitoring round. MultiRAE readings: CO = 0, H_2S = 0, LEL = 0, VOC = 0, and O_2 = 20.9. Air monitoring with the MultiRAE took place on the North, East, and south sides of the building(s) in which the explosion occured. MTB

Perma Fix E.R.

November 12, 2003 12634-001-008-0429-00

1602 START Browning and Mr. Allen begin the second air monitoring round

1607 Drager acid test tube is negative.

1615 Drager cyanide tube is positive. —— MTB

1625 Sample round ends. No readings on the MultiRAE. Summa cannister is set up at the northside of the building in which the explosion occured.

1645 Summa cannister sample is collected by Jim Presley (734-507-9892). The sample will be analyzed ① the full list (T.O. 17 or 18); and ② the top 10 tentatively identified compounds. —— MTB

1740 START Browning and Mr. Allen start a third monitoring round. An acid tube Drager test is taken, and is negative.

1742 A Cyanide Drager test begins. —— MTB

1750 Cyanide test is negative. —— MTB

1755 Sampling round ends. No readings on the MultiRAE. —— MTB

Michael J Browning
11/12/03

Perma Fix E.R.

November 13, 2003 12634-001-001-0429-00

0843 - START Browning arrives at 18550 Allen Rd (PermaFix of Michigan), to make additional observations. —— MTB

0848 - START talks with PermaFix Operations Manager Jerry Dummann. Mr. Dummann informs START that ① Mr. Allen conducted air monitoring throughout the night; ② the monitoring is still ongoing; ③ the cordoning off of the building.

0902 Calibration of the MultiRAE begins. Final calibration readings = CO = 50, H_2S = 24. LEL = 49, O_2 = 20.9, VOC = 100. —— MTB

0945 START Browning and Brad Phillips (of Schreiber and Yonley Associates, the environmental consultants and permit specialists for PermaFix of Michigan) meet to discuss the events that took place after 1930 on 11/12/03. From this meeting, START learns that (1) Mr. Phillips and Mr. Dummann cordoned off the building (Cure) with Caution tape; (2) Mr. Phillips contacted OSC Kelly at approximately 2130 on 11/12/03 to alert Mr. Kelly that the few remaining cyanide tubes would be used during the night; and

no additional tubes could be located; (3) the last air monitoring round (prior to START's arrival onsite) was at 0830; (4) the air monitoring will continue, on hourly intervals, with the 4-gas meter until the Summa Canister results arrive; (5) a Testing Engineers and Consultants representative was contacted approximately 2130 on 11/12/03 to come and inspect the Cure Building for structural integrigity (they hope come and inspect the building around the late afternoon of 11/13/03. (6) at approximately 0800 on 11/13/03, the company electrician confirmed that no power is going to the Cure Building; (7) that no drums stored in the BulKing area had been compromised, the drum dock was inspected, as well and (8) no facility personnel is currently working in the building; and (9) the shredder building was inspected with damage seen only to the ventilation system.

1021 START Browning and Mr. Phillips begin an air sampling round. ——— MTB

1035 Air monitoring round completed. Negative result on the Drager Acid Test. MultiRAE peak readings: CO=1; H_2S=0; LEL=0; VOC=0; O_2=20.9. ——— MTB

1048 START Browning, Lynn King (MDEQ, Waste and Hazardous Materials), Mr. Phillips, and Tom Caswell (PermaFix Plant Manager) begin a meeting. During this meeting, START learns that (1) the Brownstown FD called U.S. EPA, who called START at approximately 0830, (2) Mr. Phillips will interpret the air monitoring results, (3) Mr. Phillips will fax results to START at 313-46567-3945 and OSC Kelly. —— MTB

1120 START Browning leaves the site. —— MTB

Michael J Browning
11/13/03